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ECOLOGY AND TOURISM

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Abstract: Natural and physical environments merit utmost concern by tourist officials. Major publications on the environmental impacts of tourism are noted, as are others which focus on tourism development and stress and preservation. Locations where impacts are most obvious include alpine areas, coastlines, islands, lakes, and habitat areas. Use intensity, highly related to impact, is a primary factor in management. Natural features provide attractions worldwide and tourism managers are promoting them. Special tours now focus on science, research, and interpretation. *Ecotourism* and *sustainable development* enlist tourism to help maintain and enhance environmental integrity and attractiveness. **Keywords:** natural resources, ecological tourism, ecotourism, science tourism, nature tourism, carrying capacity, integrated development.

Résumé: Ecologie et tourisme. Les ressources environnementales méritent la plus grande attention des officiels du tourisme. Les publications majeures sur l'impact environnemental du tourisme sont notées, aussi bien que d'autres publications qui examinent la préservation de l'environnement. Les régions où les impacts sont des plus évidents comprennent des régions alpestres, des littéraux, des îles, des lacs et des habitats d'espèces animales. Le niveau de la fréquentation est un facteur primaire dans les efforts de mitigation. Toutes les régions du monde ont des merveilles naturelles qui attirent des touristes, et par conséquence des administrateurs du tourisme et des experts en marketing. Il existe maintenant des voyages organisés qui sont spécialisés dans les sciences, la recherche ou l'interprétation de la nature. Les mouvements pour l'*écotourisme* et le *développement prolongeable* se servent du tourisme pour maintenir et restaurer la beauté de l'environnement. **Mots-clés:** resources naturelles, écotourisme, tourisme scientifique, tourisme pour les amateurs de la nature, capacité, développement intégré.

INTRODUCTION

The natural environment is crucial to the attractiveness of almost all travel destinations and recreation areas. Natural resources, the ecosystem, regional ecology, whatever may be the designation or concept, in their physical expressions, provide an important "backdrop" to com-

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mercial service areas and recreation sites, or at least contribute to all tourist locations. Even a major city, visited for its cultural or commercial attractions, may have a significant portion of its character arising from its river, its harbor, a mountain backdrop, or surrounding agricultural countryside.

This article covers important tourism studies closely related to natural resources, the physical environment, or the ecosystem. In addition, however, it is desirable to illuminate some new trends, representing a shift from former more orthodox concerns (such as natural resource management and planning, environmental features, and recreational opportunities) to newer areas (such as ecotourism and especially tourism as an element of sustainable development). The latter, with limited and often unrefined supporting literature, reflects rapidly changing global views toward environment and development. Events of the late 1980s have dramatically enhanced the awareness of environmental quality and the effects of human activity.

In this special issue of *Annals*, the authors attempt to identify disciplinary and integrated perspectives and methodologies which are part of the study of tourism. In order to provide a balance review of tourism and the natural environment, the article draws on works from environmental studies, geography, biology, ecology, biogeography, and resource management. No one discipline, out of many that directly and indirectly make valuable contributions to the connection between tourism and nature, have acknowledged these conjunctive studies as a disciplinary subspeciality. Therefore, although there is no existing specialty, *ecological tourism*, the term is used here as a label to represent a conceptualization representing writers from a wide range of disciplines who see the value of such a focus, even if it may amount to a relatively small part of their own writings.

Ecology with a range of popular meanings is a biological study of the relationship of plants and animals to each other and to their environment. Cultural ecology concerns human beings and their environment. The relationship of tourists, communities, managers, developers, and policymakers to each other, and especially to their environment, is the substance of ecological tourism and, certainly, sustainable development.

OVERVIEW OF MAJOR WORK

There is no better starting point for those entering this area for the first time than to consult several texts in tourism and one or two review articles specifically oriented toward the physical environment. Texts recommended, which incidentally cover the topic usefully, but are not primarily focused on it, include Pearce's *Tourist Development* (1989) and Mathieson and Wall's *Tourism: Economic, Physical and Social Impacts* (1987). This latter work stresses the inadequacy of a tourism-environment notion as it has been practiced in the past. Apart from the meager number of uneven studies, those especially on impact tend to seek out single components rather than viewing an integrated array of physical systems affected by the development of tourism (Mathieson and Wall 1987:94). Gunn's *Tourism Planning* (1988) provides some very useful

perspectives, as well as design and management techniques, for integrating tourism development with aspects of natural features and resources. More focused special issues of periodicals such as the *International Journal of Environmental Studies* (1985), *Tourism and the Environment: A Review of the Literature and Issues* (Dunkel 1984) and the special issue of *Annals of Tourism Research* on tourism and physical environment (Farrell and McLellan 1987a) cover much fundamental ground. Particular articles in these series by Pearce (1985:247-255) and by Farrell and McLellan (1987b) attempt to describe important seminal works up to the mid-1980s.

More tangential than the above works, but nevertheless important here and indicating further the growing awareness of the past decade, was the special issue of the *Coastal Zone Management Journal* which brought together major elements of tourism and recreation bearing on littoral zones (Miller and Ditton 1986). Simultaneously, focused on a topic which could well be to the forefront on a number of researchers' agendas, was a United Nations Environmental Program publication, *Industry and Environment* (1986), devoting several articles to carrying capacity, a concept receiving much lip service but relatively little practical attention. Finally, a recent work on ecotourism by Elizabeth Boo (1990) surveys nature tourism in perhaps the most thoroughgoing manner yet attempted, and includes a fine thirteen-page bibliography.

Two Tier System

A reading of the record shows that much of what has been done in the past can be usefully classified into two or more streams. The review articles discussed above, especially within their bibliographies, note the numerous but scattered articles of individual scholars, usually writing in academic journals. However, the same materials draw attention, but possibly not as much as they should, to another tier—work done by institutions, those working with these bodies, and the practical work, often in great detail and specificity, produced by professional planners or consultants, either within or outside the public sector. More times than not, this latter material, written about particular projects and often not filed in local libraries, is all that is available on a particular visitor destination. The information gathered is often of high standard; but, because of its limited access it is easy to form an impression that little is known about tourism and natural systems in a specific area.

In this second category, one can place a wide array of policy studies done by governments, non-government organizations, and private consultants. Much relevant policy information of this sort was collected by Organization for Economic Co-operation and Development (OECD 1980). At a time when some academic scholars were making tentative ventures into ecological tourism studies, quasigovernmental and some environmental organizations and their researchers were systematically gathering material and making it available for wider distribution: Budowski (1976) talked about tourism and environmental compatibility; Dasmann, Milton and Freeman (1973) published one of the first works on development and nature; and Bosselman wrote on local and regional consequences of tourism-related development (1978). These persons,

and others like them, were conservationists linked to worldwide or regional environmental agencies. The growing awareness was not lost on major tourism organizations. The Pacific Asia Travel Association in 1973 showcased the theme with a workshop and meeting entitled *Tourism Builds a Better Environment. Tourism and Conservation Working Together* was the contemporaneous theme for the European Travel Commissions gathering in Copenhagen while, at the same time, the Scottish Tourism Board hosted a meeting with the same ecological theme.

In an excellent review of environmental planning and policy matters, Inskeep (1987), a former World Tourism Organization specialist, called attention to, among other things, the influential Manila Declaration of 1980, an international agreement concerning tourism, environment and culture, and a 1982 joint declaration with the United Nations Environment Program stressing the need for environmental protection and enhancement as an essential element in any tourism development.

Special Topics and Particular Places

The sources which follow all point to particular works by scholars of note, or to work on a specific, pertinent topic. Alpine areas—because of their vulnerability and the concentration of urban dwellers in small areas dependent on limited infrastructure and positioned possibly to cause considerable damage to forest, meadow, water quality, or water aesthetics—serve as good examples of the threatening interface between leisure pursuits and environment. The classic study integrated, quantitative character and change done by a team of scientists in the European Alps was that of Obergurgl (Moser and Peterson 1981). Brugger and Messerli go to the heart of the matter with their work on the impact of recreation in the Swiss Alps (1984). The same work includes a valuable statement by Krippendorf (1982, 1984) well-known for his work in alpine areas.

In North America, two more recent contributions by Rodriguez (1987) and Goldman (1989) come to mind, both of which should be essential reading for a tourism researcher interested in resource use and its ecological ramifications. Each serves to show a different facet of the overall activity and stimulates thought about the most desirable direction in which future studies might go. Rodriguez (1987), an anthropologist interested in tourism, illuminates the very complicated cultural and environmental underside to the development of the Taos ski area of New Mexico. In this article, in the context of tourism and its associated urban development, various important strands are closely woven into a fabric portraying deteriorating water quality in the Rio Hondo Basin, changing water quality, urban pollution, ramifications concerning downstream agriculture and central players like tourists, developers, townsfolk, tourist organizations, environmental groups, government agencies, and the descendents of early Hispanic settlers. In this case, environmental quality was highlighted, but it was emphasized in an integrated manner, showing the relationship between tourism and the natural resources to which it pertains and which it was using, changing, or in some cases degrading.

Charles Goldman, Chairman of the Division of Environmental Sci-

ences at the University of California, Davis, directs the Tahoe Research Group in a long-term study of Lake Tahoe, California, which started for him in 1958. In a nutshell, he sums up the Lake Tahoe situation.

> For the past three decades, Tahoe [a beautiful lake and alpine resort area in California] has been an environmental battleground involving two states, five counties, and numerous State and Federal agencies—a microcosm for testing environmental ethics against the right to build. In the 1960s, environmental forces formed a loose coalition under the leadership of the League to Save Lake Tahoe, to combat the pro-development forces backed by a billion dollar gaming industry, a host of real-estate developers and a fast-growing, year-round recreational industry (Goldman 1989:8).

This is a sophisticated and thoroughly researched article which offers explanations and practical solutions to problems of sedimentation, nutrient inflow of nitrogen and phosphorus from sewage, fertilizer, and runoff. Fertilizers are used for residential and commercial landscaping, golf courses, and to harden snow for ski races. Algae blooms and algae on shoreline rocks, piers, and boat hulls are both associated with development, fertilization, and earth disturbance. These problems attacking a true alpine gem are particularly objectionable in spring, when dense growths slough off and float to the water surface, forming decaying mats. Easily understood articles, such as this one by Goldman (1989), in principle apply equally to coastal locations (Martinez-Taberner, Moya, Ramón and Forteza 1990), islands (Baines 1982; Dahl 1980; de Groot 1983; Wilkinson 1989), or tropical coral reefs (McEachern 1972) and rain forests (Budowski 1976). For the full benefit of integration, the present authors see the inevitable benefit of joint efforts bringing together the views of science, business, management, and society.

NATURAL RESOURCE MANAGEMENT AND TOURISM

Public sector priorities and policies related to natural resource management are, and will increasingly be, crucial to tourism development. Many tourism resources in the United States, such as national parks, government facilities on shorelines and in other recreation resource areas, and many historic features and attractions, are either in public ownership or are heavily influenced by government regulations. In the United States, the emphasis on recreational use of federally managed lands, the vast national forests in particular, is currently increasing as other land and forest uses, such as timber production and grazing, become more restricted in order to maintain important habitat quality. The pertinence of resource-based tourism will likely expand in the future as urban concentrations become greater and environmental quality at many existing visitor destinations becomes increasingly degraded. Obviously those locations which succeed in enhancing, or at the very least maintaining, their relative environmental quality will enjoy increasing competitive advantages.

It is characteristic of most natural features that they are physically altered by use. Positive change should be the goal. Negative change, even in small amounts, can be critically damaging. Such alteration

occurs, for example, when human activity degrades water or air quality, alters or destroys vegetation, increases noise, or affects wildlife. Experiential degradation can also occur as a result of increased human recreational activity, even when no substantial physical alterations occur. Such a perceptual change occurs when a wilderness lake becomes more accessible to users and no longer offers the same experience of distance and separation from human habitation. For the user, the actual change may be as devastating as actual physical degradation.

The extent and nature of this environmental alteration, and/or the alteration of the recreation experience by users, typically is influenced by a number of factors, including the intensity, duration, location and other characteristics of use. Because demand and use so closely influence natural resource quality, any approach to maintaining or enhancing resource quality must involve a planning and management approach. Good management intervenes purposefully and valuably between use and its effects.

The level, extent, and concentration of recreation activity are the primary factors influencing the natural environment. Cohen (1978) calls this "intensity" and considers it a primary impact determinant. Use at low levels can be absorbed by natural systems with little or no change in measures of environmental quality. Correspondingly, the more this use is dispersed, the less the impact. As use increases, however, and/or is more geographically concentrated, the capacity of natural systems to absorb nutrients or contaminants from any source can be drastically exceeded, observable changes can occur in wildlife, and congestion and noise levels can become offensive. Controls and facility development can mitigate these impacts to a point, but simultaneously intervention at this point changes the recreation experience itself.

The typical management approach to increased demand is to "harden" the resource: by paving, fencing, restricting, or directing traffic, or by other means to facilitate more intensive use. A comparable unreceptive or hardened attitude change can occur among the destination's permanent residents. Discussions of other concepts and approaches are included in *Mountains Without Handrails* (Sax 1980), which argues for management approaches that emphasize the original, unhardened quality of natural features, even if at the cost of diminished use relative to what appears to be the potential level of development for that place. *Playing God in Yellowstone* (Chase 1986) discusses management approaches which have not achieved stated objectives with respect to wildlife resource preservation.

The concept of carrying capacity represents a way to conceptualize the relationship between intensity of use and the management objectives for a resource area. The concept is attractive in its simplicity, yet difficult to employ as a basis for a management system. Discussions of applications to tourism appear in Getz (1983), Shelby and Heberlein (1986) and O'Reilly (1986). In its simplest form, the concept suggests that a particular place could sustain indefinitely a particular intensity of use (capacity or use plateau) beyond which any extra use would produce undesirable resource degradation. Because in most cases this degradation results from human use determined by a number of factors, including management practices, the search for explicit carrying

capacities is often futile. Accordingly, resource managers have become more concerned with identifying resource management *objectives*, which in turn guide management practices.

An attempt by the U.S. Forest Service to accommodate a diversity of resource use objectives in its land management program is outlined in *Recreation Opportunity Spectrum* (Clark and Stankey 1979). Many of its aspects have been applied in a number of real resource planning and management settings. By specifying the "opportunity setting factors" which influence the character of a natural setting, they can specify development and management approaches which are most appropriate for specific sites, with opportunity setting classifications ranging from "primitive" to "modern" (extensively developed).

Another trend among public land management agencies emphasizes constructive rather than consumptive wildlife use—watching rather than hunting, for example. It specifically integrates wildlife management practices with programs for environmental interpretation while encouraging habitat area access by the public. Examples are described in *Watchable Wildlife* (Wisconsin Department of Natural Resources 1986) and a paper on non-consumptive recreation (Wyoming Game and Fish Department 1988). Through these programs, the *quality* of environmental settings is maintained (or enhanced) to the extent possible, with this quality thus constituting a primary feature and visitor attraction.

Management priorities, techniques, and facility development for many resource areas often are predicted on budgets and the likelihood of project approvals. In this context, many public agencies use benefit-cost analysis, a technique for quantifying and comparing the economic benefits and costs for a particular project or management plan. Good discussions of how benefit-cost methods can be applied to natural systems can be found in *Natural Systems and Development* (Hufschmidt 1983) and *Benefit-Cost and Beyond* (Campen 1986). Both works discuss the difficulties one faces when trying to quantify aspects of environmental quality for comparison with other benefits and costs which are readily quantifiable.

TOURISM AND ENVIRONMENTAL QUALITY

Today there is still the production of single-topic or multiple-topic impact studies, but there are others better reflecting the new directions that tourism is taking with respect to the natural environment. Many could be classified as nature tourism, biotourism, and sometimes adventure tourism. A few examples follow.

In Canada, a New Brunswick tourism organization will fly visitors to photograph Labrador harp seals where once they were slaughtered, and tourists visit Churchill, Manitoba to view the annual return of the polar bear to await the onset of sea ice. Such tourism may help counteract Churchill's failing function as a wheat port. Specially guided trips to the Galapagos Islands, safaris to Africa game reserves, or treks to Nepal are all well-known and show the growing allure of animals and natural settings to a specialized set of tourists.

Less-known is the increasing tourist appeal to Antarctica, where

mere embryonic tourism can create havoc if not monitored and guided adequately. One supply ship, the Bahia Paraiso from Argentina, spilled 170,000 gallons of petroleum fuel after it ran aground at Palmer Station. About 3,500 people a year sail to the continent from South America often under the guidance of naturalists. The most frequented area close to South America has been referred to as the Antarctic Riviera. Here, Chile has opened a hotel and activities include hiking, dogsledding, camping, and skiing. Responsible tour operators have designed codes of conduct for their patrons, and environmental organizations argues for strict limits and criminal penalties, especially where a quarter century of research may be violated by careless viewers. Resident scientists are often appalled. Today, Antarctic tourism is in its infancy, but it illustrates that tourism literally knows no bounds. The situation calls for agreement among researchers, the visitor industry, scientists, and conservationists regarding acceptable protocol to be practiced by all parties. Interesting insights of many aspects of nature tourism, science tourism, ecotourism, and sustainable development are presented in a valuable two-volume theme of the *Cultural Survival Quarterly* (Johnston 1990).

Science Tourism

In line with these new trends, Laarman and Perdue (1988, 1989) have investigated science tourism in Costa Rica. Under the auspices of the Organization for Tropical Studies (OTS), an increasing number of scientists, students, and associated workers are coming to the small country primarily, but not exclusively for scientific endeavors. Costa Rica not only provides facilities and field amenities, and a university degree in "ecological tourism" (Hill 1990:16), it is a welcoming environment and word-of-mouth and reports in academic journals certainly provide a tourist as well as a scientific motivational element. In this type of activity—and one may include Antarctic scientists here—natural systems are the primary draw, but the way they are approached as a primary focus for investigation draws a line differentiating the study of nature tourism, where tourists intimately experience nature, from science tourism where the natural environment serves a different purpose.

During recent decades, when international tourism burgeoned throughout much of the Western world and in a number of lesser developed countries, some major local environmental quality problems became more regionally obvious and a few global in extent. Global climatic change is one such problem. Its analysis suggests that tourism, transportation, and urbanization may contribute as powerfully to global problems as any other aspect of industrialization. Not only is tourism one of the contributory factors, it is likely to be modified, perhaps drastically, by its consequences. The governments of the Pacific Forum countries associated with Australia and New Zealand, most of which depend to a significant extent on tourism, are in discussion concerning the effects of climatic change on oceanic islands. In Canada, Geoffrey Wall, a tourism specialist and geographer, is working closely with government agencies on climate (Wall 1991).

Ecotourism

Ecotourism is a relatively late comer in the field of tourism study. Associated research, much of which is in embryonic form, focuses on the environment in a spacial manner in which conservationists and tourist interests see the mutual advantages of working together, to preserve environmental quality while mutually protecting tourism. When the saving of an endangered species, a rain forest, or a wetland can be aided by cooperative strategies, this is *ecotourism*. It is a subset of nature tourism taken a step farther, with nature and tourism considered equal partners. It is not the harnessing of tourists for an environmental cause, although the word has been used this way. One can differentiate ecotourism from nature tourism, unlike Boo (1990). Ecotourism is more exclusively purposeful and focused on the enhancement or maintenance of natural systems through tourism.

Where the very existence of parks and wildlife species survival dependent on tourists, as in Kenya (Lusigi 1981; Myers 1974), in the Kalahari (Hitchcock and Bradenburgh 1990); where conservationists and tourist organizations band together in Port Alberni, British Columbia to prevent the clear-cutting of Douglas Fir, because they can prove that the area benefits more from unviolated forests and tourists than from logging; and where diverse organizations join to decide for wetlands, wildlife, and tourism, rather than rice projects and peat mining in Jamaica (Bacon 1987), such strategies signal ecotourism in action. These, and the Yucatan study of Daltabuit and Pi-Sunyer (1990), May's article on the Haida (1990), and Chapin's (1990) piece on Panama (in Johnston 1990) show cooperative strategies where tourism benefits in a manner not possible while operating alone. As described, ecotourism is a useful concept. Elsewhere it is fast becoming a catchall vogue-word applied indiscriminately to almost anything linking tourism and nature, and sometimes to tourism as a defender of culture.

Scholars interested in conservation biology and biodiversity, along with organizations such as the World Wildlife Fund (WWF), see ecotourism as a contemporary strategy vital to the maintenance of healthy ecosystems. A pioneer study, referred to earlier, of outstanding contemporary importance is Boo's *Ecotourism: The Potentials and Pitfalls* (1990). This was a team effort of 24 workers from WWF which has established a permanent ecotourism unit under its sustainable development division. The two volumes, one general and the other detailed case studies of five Latin American countries, should be required reading for both academic tourism scholars and tourism managers alike.

SUSTAINABLE DEVELOPMENT

The literature on sustainable development, while growing fast, is spotty. Although its buzz-word quality is overworked and some might think of it as a passing fad, there is considerable merit to its concepts. There is solid literature on the topic as a review by O'Riordan (1988) indicates, and an acceptance by numerous governments. Despite its flaws, clearer themes are emerging and from numerous centers constant refinement is taking place.

Thorough discussions of the notion may be found in Turner's *Sustain-*

able Environmental Management (1988) and Clark and Munn's *Sustainable Development of the Biosphere* (1986), the first largely from the viewpoint of social sciences and the second from the natural sciences. There are many variations of sustainable development and what appears now as the emerging consensus examined by Farrell (1991), put as simply as possible by Farrell and McLellan (Farrell and McLellan 1987a, 1987b), and as briefly as possible in a recent article with a tourist case study, also by Farrell (1990). Boo (1990) gives impetus to this emerging focus.

Although a number of international declarations and strategies have set the stage for sustainable development, nothing has had greater impact that the World Commission on Environment and Development (WCED or the Bruntland Report) which drew on worldwide hearings in dozens of nations (WCED 1987). Its conclusions, endorsed widely, were that development can be sustainable only by focusing simultaneously on the integration of major elements, closely charted development, conservation, cultural compatibility, and local input. No form of economic development, including tourism, can develop long-term and sustained viability unless the economy is linked with environment and society in a threefold interactive development system. In this context, tourism, as with all other vehicles for economic development, must be consistent with long-term perspectives. Sustainability is an exercise in the conditional optimization and fine-tuning of all elements of the development system (including tourism) so that the system as a whole keeps its bearings without one of its elements surging forward to the detriment of others. When development strategies, as described, appear capable of continuing indefinitely into the future without harmful side effects, the operation is at least on the sustainable development pathway.

Policies of numerous Western countries have, to a greater or lesser degree, been affected by the Bruntland Report. Canada, for instance, has made sustainable development central to its development planning. The National Task Force on Environment and Ecology was established by the Canadian Council of Resource Ministers (CCREM) in 1986 as a direct response to the WCED to initiate dialogue on environment-economy integration. The group includes the country's environmental ministers, senior executive officers from Canadian industry, and representatives of environmental organizations. The mandate of the Task Force was to promote "environmentally sound economic development" (Government of Canada 1987:1).

In the Province of Alberta, mandated activity is taking place. It is believed this will result in an economy-conservation strategy being in place in the early 1990s. Part of this activity is the initiation of a sectoral report on tourism. An example of the new look of tourism publications in the sustainable development mode is Wight's *Tourism in Alberta* (1988). The bulk of the work is divided into "achieving sustainable use" and "interaction between resource users." The conventional items one expects to find are included, but more than 50% of the work is devoted to integrated sustainable development à la Bruntland. de Kadt, at the 1989 meeting of the International Academy for the Study of Tourism in Poland, presented especially interesting observations on sustainable development (1989). His paper, "Making the Alternative

Sustainable: Lessons from Development for Tourism," epitomizes enlightened present thinking.

An interesting study of great significance, when applied to tourism, is Hough and Sherpa's "Sustainable Development—Nepal/Malawi" (1989). Here bottom-up, community-driven approaches versus an authority imposed "basic needs" model, both integrating conservation and development (including tourism) in Annapurna and Michiru Mountains in Nepal and Malawi, are perceptively compared with lessons for tourism scholars working in Third World areas. In Costa Rica, Janzen, in relation to the Guanacaste National Park project, where he has worked closely, gives tourism an appropriate priority, but nevertheless an essential place after habitat restoration, local recreation, and educational needs, all of which must be looked at together (quoted in Allen 1988:156). Similar lessons in an integrated context can be learned about Hawaii (Farrell 1982).

CONCLUSIONS

This review, directly and by extension, shows how hundreds of works pertain to tourism's relationship to the natural environment. The bibliography has been purposely limited, but every item cited has itself a bibliography on the subject. While tourism-environment connections are not currently embodied as a specific academic discipline, the field exists and increasingly is necessary to tourism and natural systems researchers and professionals for the understanding of important contemporary problems. No introductory course should be without its ecological tourism element.

Further, the article shows that the factor of environmental quality appears in a variety of different ways, from narrowly focused topics through degrees of integration to, in theory, the most completely integrated studies concerned with sustainable development. Topical and regional studies are important, but undoubtedly the trend is toward a much greater degree of integration in both conceptualization and management. Tourism managers and developers, and social and natural sciences scholars are encouraged to contribute to the topic in a multidisciplinary manner to help ensure healthy, innovatively managed tourism in well-maintained and restored environments and a milieu governed by a better-informed and an increasingly satisfied society.

How dependent tourism has always been on its natural surroundings is understood much less than it should be. Scenery, a term doing minimal justice to the features it denotes, either stark or lush, subdued or grand, hostile or even unobtrusive in its uniformity, colors the intensity of any tourist experience. Yet, for some/many tourist workers and tourists alike, landscape is a given and a taken-for-granted supply amenity. Where it dominates with sensational beauty or grandeur, it is harnessed as an obvious resource, but its less-obvious manifestations have, in the past, been lost on all but the most perceptive observers. However, now, over the past few years, judged by the announcements for tourism-environment-oriented conferences and workshops, a new order is dawning.

Thirty years ago, at the Pacific Science Congress in Honolulu, the

conference theme was "Man in the Island Ecosystem." Raymond Fosberg contended that "an ecosystem is a functioning, interacting system composed of one or more living organisms and their effective environment both physical and biological" (Fosberg 1963:2). The study of such a system is ecology. It is a short step from seeing the essentiality of organisms with their comprehensive environments to acknowledging the vitality of a subsystem where human beings do the same thing. In particular, tourism in all its complexity, must be seen to interface with the complexities of environment and culture, to view the whole picture of integrated activity rather than only half a picture—tourism operating in a virtual vacuum—with which people have lived for decades.

Everything nowadays points to the acceleration of the integration of the elements mentioned in the name of "more responsible" or sustainable development. The burgeoning of tourism to reflect these trends is a present day growth point within the industry. There is much activity along these lines taking place today, and considerable clarification to its understanding is necessary.

In acknowledgement that rapid change is in progress, the International Academy for the Study of Tourism, the most prestigious world-body concerned with scholarly tourism, devoted its 1989 meeting in Poland to "alternative forms of tourism," often loosely called "responsible tourism." Although the group was unable to find a definitive "alternative tourism" and did not encourage the use of the term, it did acknowledge the considerable worth of responsible, innovative, integrated, and sustainable tourism which included not only behavior and new forms of marketing, but also the need for alternative, responsible and innovative governance and management leading ultimately to sustainable development. The ideas generated at this conference will be published in book form (Smith and Eadington 1991). Part of the goal of this article was to take some of these ideas further and to show how the notion of integration and sustainable development are likely to direct much tourism activity in the future. To achieve this end, a thorough knowledge of ecological tourism is necessary and an opening up of tourism study, both academic and practical, to these endeavors is essential.□□

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